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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,660	02/13/2002	Gene R. Hawkins	DP-306261	6085

7590

07/31/2003

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EXAMINER

JULES, FRANTZ F

ART UNIT

PAPER NUMBER

3617

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,660

Applicant(s)

HAWKINS ET AL

Examiner

Frantz F. Jules

Art Unit

3617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenssen et al (6,036,370) in view of Wierzchon (US 6,125,526).

Claims 1-6

Kenssen et al teach all the limitations of claims 1-5 by showing in fig. 1 a vehicle wheel bearing comprising a vehicle –wheel-bearing non rotatable section (22), a vehicle-wheel-bearing rotatable section (12) rotatably attached to the non-rotatable section, wherein the rotatable section has a hole (21), a wheel stud (20) including first and second portions, wherein the first end portion has external thread, and wherein the second end portion has a wheel nut.

The rotatable section (12) is a wheel-bearing spindle, the non-rotatable section (22) is a wheel bearing hub as required by claims 2, 6.

The rotatable section (12) includes a flange (18) having an inboard and an outboard side (18B, 18A), wherein the flange has a through hole (21), wherein the first portion of the wheel stud has a bolt head (20A) which is disposed inboard side of the inboard side (18B) of the flange as required by claim 3.

Kenssen et al disclose all of the features as listed above but does not disclose a vehicle wheel bearing assembly having a rotatable spindle with internal threads in a hole including a wheel stud having first left-hand external threads on larger diameter and second right-hand threads on a smaller diameter. The general concept of providing a member with internal thread in a hole of a flange member to receive a stud having first left-hand external threads on larger diameter and second right-hand threads on a smaller diameter is well known in the art as illustrated by Wierzchon which discloses a flange member (20) with internal threads (26) in a hole to receive a stud (32) having first left-hand external threads (28) on larger diameter and second right-hand threads (42) on a smaller diameter, see fig. 4, col. 2, lines 36-41, column, 3, lines 8-15. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kenssen et al to include the use of a rotatable spindle with internal threads in a hole of the spindle including a wheel stud having first left-hand external threads on larger diameter of the stud and second right-hand threads on a smaller diameter of the stud in his advantageous vehicle wheel bearing as taught by Wierzchon in order to reduce stress in the spindle as well as manufacturing time and cost of the assembly as threaded connection is more cost effective than spline fitting or press fitting connection due to greater manufacturing tolerances that is required, and to produce a compressive force by acting on the flanges of the spindle and of the wheel thereby defining a unitary structure.

Claims 7-13

Kenssen et al teach all the limitations of claims 7-13 by showing in fig. 1 a vehicle wheel bearing comprising a vehicle –wheel-bearing non rotatable section (22), a vehicle-wheel-bearing rotatable section (12) rotatably attached to the non-rotatable section, wherein the rotatable section has a hole (21), a wheel stud (20) including first and second portions, wherein the first end portion has external thread, and wherein the second end portion has a wheel nut.

The rotatable section (12) is a wheel-bearing spindle, as required by claims 9, 13.

The rotatable section (12) includes a flange (18) having an inboard and an outboard side (18B, 18A), wherein the flange has a through hole (21), wherein the first portion of the wheel stud has a bolt head (20A) which is disposed inboard side of the inboard side (18B) of the flange as required by claim 10.

Kenssen et al disclose all of the features as listed above but does not disclose a vehicle wheel bearing assembly having a rotatable spindle with internal threads including a wheel stud having first left-hand external threads on larger diameter and second right-hand threads on a smaller diameter. The general concept of providing a member with internal thread to receive a stud having first left-hand external threads on larger diameter and second right-hand threads on a smaller diameter is well known in the art as illustrated by Wierzchon which discloses a member (20) with internal threads (26) to receive a stud (32) having first left-hand external threads (28) on larger diameter and second right-hand threads (42) on a smaller diameter, see fig. 4, col. 2, lines 36-41, column, 3, lines 8-15. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kessen et al to include the use of having a rotatable

spindle with internal threads including a wheel stud having first left-hand external threads on larger diameter and second right-hand threads on a smaller diameter in his advantageous vehicle wheel bearing as taught by Wierzchon in order to reduce stress in the spindle as well as manufacturing time and cost of the assembly as threaded connection is more cost effective than spline fitting or press fitting connection due to greater manufacturing tolerances that is required, and to produce a compressive force by acting on the flanges of the spindle and of the wheel thereby defining a unitary structure.

3. Claims 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wierzchon in view of Kessen et al.

Claims 14-20

Wierzchon discloses a vehicle stud (32) including a first portion (46) having bearing-engaging first external threads (28) and including a second portion (42) having nut-engaging second external threads, wherein the first portion (46) has a first diameter at the first external threads, wherein the second portion has a second diameter at the second external threads, wherein the first diameter is larger than the second diameter as seen in fig. 4, wherein the first portion has a bolt head (36), wherein the first external threads (28) are disposed between the bolt head (36) and the second external threads (42), wherein the bolt head (36) has a portion having a diameter larger than the first diameter (of portion 46), wherein the first external threads (28) are left handed threads

as disclosed in column 3, lines 8-15, and wherein the second external threads are right-handed external threads.

Wierzchon teaches all of the features as listed above but does not disclose a wheel stud used in a vehicle wheel including a stud body that engages the vehicle wheel in threaded engagement. The general concept of providing a vehicle wheel with a wheel stud is well known in the art as illustrated by Kessen et al, see fig.1. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Wierzchon to include the use of a wheel stud used in a vehicle wheel including a stud body that engages the vehicle wheel in threaded engagement in his advantageous vehicle stud as taught by Kessen et al in order to take advantage of the threaded connection over spline fitting or press fitting connection to reduce stress in the wheel as well as manufacturing and assembly cost in the wheel assembly.

Response to Arguments

4. Applicant's arguments filed 05/05/2003 have been fully considered but they are not persuasive.

A. Summary of applicant's argument

In the amendment, applicant traversed the rejection of the newly amended claims 1-20 for the following reasons:

1. The reference cited in the 102 rejection, Wierzchon, is not directed to a vehicle wheel stud upon which is mountable a wheel.
2. The motivation to combine the references is not found in either Kessen et al or Wierzchon.

B. Response to applicant's argument

1. Applicant's argument number one is moot in view of the withdrawal of the 102 rejection and its substitution by a 103 rejection.

1. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, one of ordinary skill in the art would have been motivated to incorporate the teaching of "a vehicle wheel bearing assembly having a rotatable spindle with internal threads in a hole as well as a vehicle stud including a first portion having bearing-engaging first external threads and including a second portion having nut-engaging second external threads, wherein the first portion has a first diameter at the first external threads, wherein the second portion has a second diameter at the second external threads, wherein the first diameter is larger than the second diameter, wherein the first portion has a bolt head, wherein the first external threads are disposed between the bolt head and the second external threads, wherein the bolt head has a portion having a diameter larger than the first diameter, wherein the first external threads are left handed threads" as taught by Wierzchon into Kessen et al in order to achieve, among others, the benefit of reducing stress in the spindle as well as manufacturing time and cost of the assembly.

Conclusion

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frantz F. Jules whose telephone number is (703) 308-8780. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph S. Morano can be reached on (703) 308-0230. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Frantz F. Jules
Examiner
Art Unit 3617

FFJ

July 28, 2003



S. JOSEPH MORANO
SUPERVISORY PATENT EXAMINER
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